

Claims

- [c1] 1. A staple forming device for bending staple blanks into a shape suitable for being driven into an article including a plurality of components for securing those components together, said staple forming device comprising:
a staple forming arrangement having a main body portion and a staple crown-forming portion reciprocatingly interconnected together;
an elastic element interconnected between said main body portion and said staple crown-forming portion, said elastic element configured to bias said staple crown-forming portion away from said main body portion.
- [c2] 2. The staple forming device as recited in claim 1, further comprising:
said staple crown-forming portion secured in at least one guide arrangement to said main body portion and configured for reciprocation therein.
- [c3] 3. The staple forming device as recited in claim 1, further comprising:
a gap space provided between said main body portion and said staple crown-forming portion, said gap space configured to accommodate reciprocating motion between said staple crown-forming portion and said main body portion.
- [c4] 4. The staple forming device as recited in claim 1, further comprising:
a gap space provided between said main body portion and said staple crown-forming portion, said gap space configured to accommodate reciprocating motion between said staple crown-forming portion and said main body portion;
and
said elastic element interconnected across said gap space for biasing said staple crown-forming portion away from said main body portion.
- [c5] 5. The staple forming device as recited in claim 1, further comprising:
a driver blade interconnected with said main body portion of said staple forming arrangement.
- [c6] 6. The staple forming device as recited in claim 1, further comprising:
a driver blade integrally formed with said main body portion of said staple forming arrangement.
- [c7] 7. The staple forming device as recited in claim 1, further comprising:

a driver blade interconnected with said main body portion of said staple forming arrangement; and
said staple crown-forming portion being adjacently positioned to said driver blade and arranged for reciprocation relative thereto.

- [c8] 8. The staple forming device as recited in claim 1, further comprising:
a driver blade interconnected with said main body portion of said staple forming arrangement; and
said staple crown-forming portion abuttingly engaged with said driver blade and arranged for reciprocation relative thereto.
- [c9] 9. The staple forming device as recited in claim 1, further comprising:
a driver blade interconnected with said main body portion of said staple forming arrangement, said driver blade and said main body portion being of sheet construction; and
said driver blade being located substantially on a common plane with said main body portion.
- [c10] 10. The staple forming device as recited in claim 1, further comprising:
at least one leg-bending portion positioned along side said staple crown-forming portion.
- [c11] 11. The staple forming device as recited in claim 1, further comprising:
two leg-bending portions, one each positioned along either of two lateral sides of said staple crown-forming portion.
- [c12] 12. The staple forming device as recited in claim 1, further comprising:
said elastic element being at least partially hairpin shaped.
- [c13] 13. The staple forming device as recited in claim 1, further comprising:
said elastic element being a leaf spring.
- [c14] 14. A staple forming device for bending staple blanks into a shape suitable for being driven into an article including a plurality of components for securing those components together, said staple forming device comprising:
a staple forming arrangement having a staple crown-forming portion

interconnected with a main body portion by a take-up device configured to permit reciprocation of said staple crown-forming portion relative to said main body portion; and

said take up device including a biasing means for applying an outwardly directed force between said staple crown-forming portion and said main body portion, said biasing means having sufficiently high biasing strength for maintaining said staple crown-forming portion in an extended staple bending position against the resistance of a staple blank being bent over a bending die.

[c15] 15. The staple forming device as recited in claim 14, further comprising: said biasing means having sufficiently low biasing strength for permitting said crown-forming portion to retract toward said main body portion after a staple blank has been bent into a staple shape and as said main body portion continues to travel toward the bending die.

[c16] 16. A staple forming device for a stapler of the type in which staples are driven by a driver blade into a workpiece and which includes a staple magazine in which are stored a longitudinal band of interconnected staple blanks that are advanced by a feed device onto a bending die, the bending die having an upper support surface over which the staple blanks are bent into a staple shape that exhibits a first and a second leg with an intermediate crown portion, said staple forming device comprising:
 a first leg-bending portion and a second leg-bending portion with an intermediate crown-forming portion having a stamping surface;
 a drive means for driving said stamping surface from a starting position of a staple-forming motion in which the staple forming device is brought against the bending die and whereupon said first and second leg-bending parts bend the staple blank into a staple shape over the bending die, said drive means further configured for continuing the staple forming motion so that the stamping surface advances a distance such that the stamping surface of the crown-forming part presses the crown portion of the staple blank against the support surface, whereupon the staple forming device is reciprocated by said drive means to said starting position and a bent staple is fed forward into an operative position with respect to a driver blade; and

said crown-forming portion being displaceably interconnected by an elastic element to a main body portion of the staple forming device and arranged for reciprocation of said crown-forming portion relative to said main body portion.

[c17] 17. A staple forming device as recited in claim 16, further comprising:
said elastic element is provided in the form of a hairpin-shaped leaf spring.

[c18] 18. A staple forming device as recited in claim 16, further comprising:
said crown-forming portion being secured to said main body portion of said staple forming device by a first and second guide arrangement, each of which are configured for facilitating reciprocation of said crown-forming portion relative to said main body portion of said staple forming device.

[c19] 19. A staple forming device as recited in claim 16, further comprising:
an integrated driver blade.